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Square Planar

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Silicon

Silicones

Silver

Single Bond

Single covalent bond

Single-replacement reaction

Smithsonite

Smoke

Soap

Soda

Soddy

Sodium

Sodium Benzoate

atoms at the corners of a square.

Square Planar: A term used to describe molecules and

polyatomic ions that have one atom in the center and four







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Square Planar Complex

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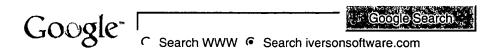


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Square Planar Complex: Complex in which the metal is in the center of a square plane, with ligand donor atoms at each of the Anthropo four corners







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Quality

Europium, atomic no.: **63**, symbol as **Eu**, weight at **151.96**, is utilized primarily for its unique luminescent behavior. Excitation of the Europium atom by absorption of ultra violet radiation can result in specific energy level transitions within the atom creating an emission of visible radiation.

In energy efficient fluorescent lighting, Europium provides not only the necessary red, but also the blue. Several commercial blue phosphors are based on Europium for color TV, computer screens and fluorescent lamps. Its luminescence is also valuable in medical, surgical and biochemical applications.

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Europium Fluoride	EuF3.3H2O	99.9%	6345	White powder	Metallurgy
Europium Metal	Eu	99.999% 99.99% 99.95% 99.9% 99%	6361 6363 6364 6365 6367	Silver grey pieces	Nuclear industry
<u>Europium Nitrate</u>	Eu(NO3)3	99.99% 99.9%	6373 6375	White materials	Phosphor
Europium Oxalate	Eu2(C2O4)3.10H2O	99.99% 99.9%	6383 6385	White materials	Phosphor
Europium Oxide	Eu2O3	99.9999% 99.999% 99.995% 99.99% 99.9% 99.5% 99%	6390 6391 6392 6393 6395 6396 6397	Pinkish white powder	Nuclear industry; Phosphor for CRT & three bands lamps; Plat plasma Screen;
Europium Sulphate	Eu2(SO4)3	99.99% 99.9%	6303 6305	White materials	Phosphor
Yttrium/Europium Co-Precipitated Oxide	(Y/Eu)2O3	4.00% 4.50% 5.40% 6.50%	6304 6305 6307 6306	White powder	Phosphor for CRT & three bands lamps;
Yttrium/Europium/Terbium Co-Precipitated Oxide	(Y/Eu)2O3:Tb4O7	25ppm	6308	White powder ··	Phosphor for CRT & three bands lamps;

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[General | States | Energies | Oxidation & Electrons]
[Appearance & Characteristics | Reactions | Other Forms]
[Radius | Conductivity | Abundance | History]

General

Name	Europium	Symbol	Eu
Atomic number	63	Atomic weight	151.96
Density @ 293 K	5.259 g/cm3	Atomic volume	28.9 cm3/mol
Group	Rare Earth	Discovered	1901

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States

State (s, l, g)	S		
Melting point	1095.2 K	Boiling point	1712 K
Heat of fusion	9.210 kJ/mol	Heat of vaporization	143.50 kJ/mol

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Energies

1st ionization energy	546.7 kJ/mole	Electronegativity	1.12
2nd ionization energy	1085 kJ/mole	Electron affinity	50 kJ/mole
3rd ionization energy	2405 kJ/mole	Specific heat	0.18 J/gK
Heat atomization	178 kJ/mole atoms		

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Oxidation & Electrons

Shells	2,8,18,25,8,2	Electron configuration	[Xe] 4f7 6s2
Minimum oxidation number	0	Maximum oxidation number	3
Minimum common oxidation number	0	Maximum common oxidation number	3

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Appearance & Characteristics

Structure	bcc: body-centered cubic	Color	silvery-white
Uses	alloys, color TV phosphor	Toxicity	
Hardness	mohs	Characteristics	hard



and heating the mixture in a tantalum crucible under high vacuum. The element is collected as a silvery-white metallic deposit on the walls of the crucible. As with other rare-earth metals, except for lanthanum, europium ignites in air at about 150 to 180C. Europium is about as hard as lead and is quite ductile. It is the most reactive of the rare-earth metals, quickly oxidizing in air. It resembles calcium in its reaction with water. Bastnasite and monazite are the principal ores containing europium. Europium has been identified spectroscopically in the sun and certain stars. Seventeen isotopes are now recognized. Europium isotopes are good neutron absorbers and are being studied for use in nuclear control applications. Europium oxide is now widely used as a phospor activator and europium-activated yttrium vanadate is in commercial use as the red phosphor in color TV tubes. Europium-doped plastic has been used as a laser material. With the development of ion-exchange techniques and special processes, the cost of the metal has been greatly reduced in recent years. Europium is one of the rarest and most costly of the rare-earth metals. It is priced about about \$7500/kg.

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Creation date: 03-05-2004

Indexing Officer: FNIGATU - FITSUM NIGATU

Team: OIPEBackFileIndexing

Dossier: 09830147

Legal Date: 08-29-2002

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